

# Geographic Information Systems

Programme course

6 credits

Geografiska informationssystem

TNK046

Valid from: 2017 Spring semester

**Determined by**  
Board of Studies for Industrial  
Engineering and Logistics

**Date determined**  
2017-01-25

## Main field of study

Transportation Systems Engineering

## Course level

First cycle

## Advancement level

G1X

## Course offered for

- Communications, Transport and Infrastructure, M Sc in Engineering
- Civic Logistics, Bachelor´s Programme
- Civil Engineering, B Sc in Engineering

## Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

## Intended learning outcomes

The main purpose is to give basic theoretical and practical knowledge in geographic information systems (GIS). The course shall also give an introduction to database technology. After the course the student should

- understand the relational model and the query language SQL
- be familiar with the basic theory within geographic information science
- be familiar with several methods used for GIS-analyses
- be able to choose the right method to use for analysing different problems
- be able to work independently with GIS-software and to present results from GIS-analysis in a clear and well structured report

## Course content

Data structures and modelling. Relational databases and query languages, especially SQL. Spatial data bases. Cartography. Data collection for GIS's. Spatial analysis. Applications related to traffic and transportation.

## Teaching and working methods

Lectures, lessons and laboratory work. The laboratory work is mandatory.

## Examination

LAB1	Laboratory work	3 credits	U, G
TEN1	Written Examination	3 credits	U, 3, 4, 5

## Grades

Four-grade scale, LiU, U, 3, 4, 5

## Other information

*Supplementary courses:*

Positioning Systems

## Department

Institutionen för teknik och naturvetenskap

## Director of Studies or equivalent

Erik Bergfeldt

## Examiner

Carl Henrik Häll

## Course website and other links

<http://www.itn.liu.se/~carha/tnko46>

## Education components

Preliminary scheduled hours: 52 h

Recommended self-study hours: 108 h

## Course literature

### Additional literature

#### Books

Harrie, Lars, (2013) *Geografisk informationsbehandling : teori, metoder och tillämpningar*

ISBN: 9789144088778

Lund : Studentlitteratur, 2013

## Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at [http://stydokument.liu.se/Regelsamling/Innehall/Utbildning\\_pa\\_grund-\\_och\\_avancerad\\_niva](http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva).